South East Asian J. Math. & Math. Sc.
Vol.2 No.1(2003), pp.1-14

EXISTENCE OF SOLUTIONS FOR GENERALIZED VECTOR VARIATIONAL-LIKE INEQUALITIES[1]

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(Received: February 20, 2003; Submitted by K.R. Kazmi)

Abstract : In this paper, we establish some existence theorems for a new class of generalized vector variational-like inequalities in Banach space and in Hausdörff topological vector space under compact and noncompact assumptions on underlying convex sets.

Keywords : Generalized vector variational-like inequalities, escaping sequences, upper semicontinuous affine and pseudomonotone mappings.
2000 AMS Subject Classifications : 49J40, 47H19, 90C30

1. Introduction

The Vector variational inequality problem was first introduced and studied by Giannessi [6] in finite dimensional Euclidean spaces. Later, Chen *et.al.* [1-3], Lee *et.al* [9], Siddiqi *et.al* [13] and Yang [16], established some kinds of vector variational inequalities and vector variational-like inequalities in general Banach spaces and Hausdörff topological vector spaces. Recently, Kazmi and Khan [7] have intensively studied and established some existence theorems for solutions of some new class of generalized vector variational-like inequalities in reflexive Banach spaces.

Motivated and inspired by the recent work on vector variational inequalities and vector variational-like inequalities in this paper we consider a new class of generalized vector variational-like inequality problem (in short GVVLIP) of which mostly previously known vector variational (variational-like) inequality problems are special cases. Further, using Fixed point Theorem [15] and a theorem due to Fan [5], we establish some existence results for GVVLIP in Hausdörff topological vector space and Banach space under compact and noncompact assumptions on

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